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CONTENTS

Specifications for insecticides and methods of application . . 147
Malaria control 152
World incidence of typhoid and paratyphoid fevers since 1947 156
World incidence of poliomyelitis in 1950 161
FAO/WHO brucellosis centres 167
New WHO statistical publication 169

Reports from WHO Fellows

Nursing in " outback " Australia 170

Notes and News

Venereal diseases 171
Publications 172

Views on WHO

Local responsibility for world health 174

RECENT AND FORTHCOMING MEETINGS

1950

2-9 November	WHO Expert Committee on International Epidemiology and Quarantine, Legal Subcommittee, third session, Geneva
6-7 November	WHO Expert Committee on the Unification of Pharmacopoeias, Subcommittee on Non-Proprietary Names, first session, Geneva
6-11 November	WHO Expert Committee on Biological Standardization, fourth session, Geneva
6-13 November	FAO/WHO Expert Panel on Brucellosis, first session, Washington
27 November-9 December	Commission for Technical Co-operation in Africa, WHO Malaria Conference in Equatorial Africa, Kampala, Uganda
11-12 December	Preparatory Working Group on a Public-Health Administration Seminar, Geneva
11-16 December	WHO Expert Committee on Malaria, fourth session, Kampala, Uganda
11-16 December	WHO Expert Committee on Mental Health, Subcommittee on Alcoholism, first session, Geneva
11-16 December	Joint WHO/FAO Expert Group on Zoonoses, first session, Geneva

1951

8-30 January	WHO Executive Board: Standing Committee on Administration and Finance, Geneva
22 January-5 February	WHO Executive Board, seventh session, Geneva
30 January	Léon Bernard Foundation Committee, Geneva
9 April-4 May	WHO Special Committee to consider the Draft International Sanitary Regulations prepared by the Expert Committee on International Epidemiology and Quarantine, Geneva
10-17 April	Joint FAO/WHO Expert Committee on Nutrition, second session, Rome
19-28 April	WHO Expert Committee on the Unification of Pharmacopoeias, eighth session, Geneva
30 April-1 May	WHO Expert Committee on the Unification of Pharmacopoeias, Subcommittee on Non-Proprietary Names, second session
7-25 May	Fourth World Health Assembly, Geneva
18 May	WHO Regional Committee for the Western Pacific, first session, Geneva
28-29 May	WHO Consultative Committee for Europe, first session, Geneva
1-18 June	WHO Executive Board, eighth session, Geneva
July, tentatively	WHO Expert Committee on Drugs Liable to Produce Addiction, third session, Geneva
30 July-4 August	WHO Expert Committee on Insecticides, third session, Savannah, Ga.
September	WHO Regional Committee for the Western Pacific, second session, Manila
September	WHO Regional Committee for the Eastern Mediterranean, fourth session, Teheran
September	WHO Regional Committee for South-East Asia, fourth session, Rangoon

SPECIFICATIONS FOR INSECTICIDES AND METHODS OF APPLICATION

Establishing specifications for insecticides and spraying apparatus is a function rightfully within the province of an international health organization, since disinsection plays an important part in the worldwide control of malaria and other insect-borne diseases. This function of WHO was one of the chief concerns of the Expert Committee on Insecticides when it met, for the second time,[1] from 4 to 11 October 1950 to continue its work of drawing up what will probably become an international manual on insecticides and spraying equipment. The report of the committee has recently appeared as *World Health Organization: Technical Report Series* No. 34.

Disinsection Methods for Quarantine Purposes

The committee had been requested by the Executive Board [2] to collect technical information on the disinsection of ships and aircraft for submission to a joint session with the Expert Committee on International Epidemiology and Quarantine, which was held on 10 October. The Expert Committee on Insecticides therefore reviewed the procedures outlined in the report on its first session [3] and amended them in the light of information which had since become available.

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[1] The following took part in this session :

M. Aziz, Bey, Chief Health Inspector, Medical and Health Department, Nicosia, Cyprus
Amiral R. Boris, Paris, France
Dr. R. A. E. Galley, Secretary, Inter-Departmental Insecticide Committees, Agricultural Research Council, London, United Kingdom (*Chairman*)
G. Holt, United Kingdom Shipping Expert
Dr. J. H. Hughes, Chief, Entomology Section, Division of Foreign Quarantine, US Public Health Service, Washington, D.C., USA
Médecin-Inspecteur divisionnaire J. Lembrez, Directeur du Service de Contrôle sanitaire aux Frontières maritimes et aériennes, Marseilles, France
Dr. J. A. Logan, Superintendent, Ente Regionale per la Lotta Anti Anofelica in Sardegna (ERLAAS), Cagliari, Sardinia
Professor G. G. Mer, Chief Adviser, Antimalaria Service of the Government of Israel ; Director, Malaria Research Station, Rosh Pina, Israel
Professor A. Missiroli, Chief, Parasitology Laboratory, Istituto Superiore di Sanità, Rome, Italy (*Vice-Chairman*)
Dr. S. W. Simmons, Scientist Director, Chief, Technical Development Services, Communicable Disease Center (US Public Health Service), Savannah, Ga., USA
Dr. J. Treboux, Research Laboratory, J. R. Geigy S.A., Basel, Switzerland

Observer :

Dr. F. de Tavel, Medical Adviser, International Civil Aviation Organization, Montreal, Canada

Secretary :

J. W. Wright, Malaria Section, WHO

[2] *Off. Rec. World Hlth Org.* 1950, 25, 5

[3] *World Hlth Org. techn. Rep. Ser.* 1950, 4, 16

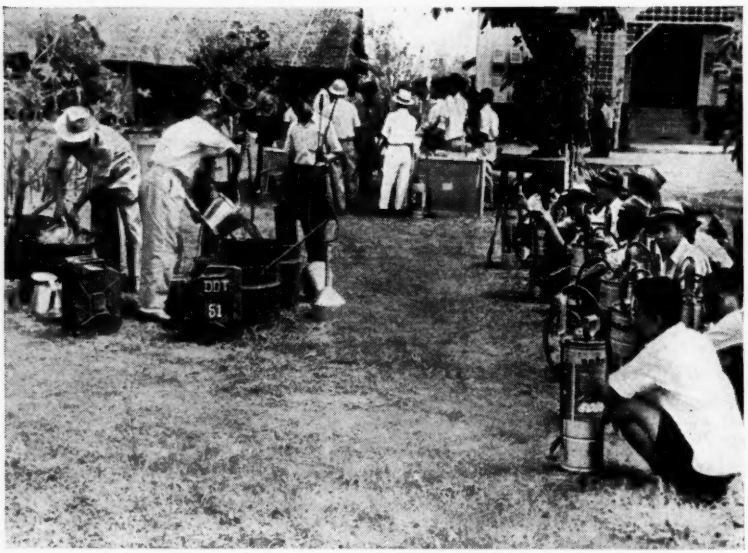
The committee endorsed the recommendation of the Expert Committee on Malaria (third session) concerning " rigid antimosquito sanitation . . . within mosquito flight-range of sea- and airports ".[4] It suggested, however, that sanitary regulations governing the routine disinsection of ships and aircraft apply only to " areas suspected of being infested with insect vectors of disease . . . to such a degree that they represent a danger to other countries ", these areas to be defined by the Expert Committee on International Epidemiology and Quarantine. The definition of the authority responsible for carrying out or supervising disinsection operations was also left to the Expert Committee on International Epidemiology and Quarantine, but it was strongly recommended that this be made the duty of the health authority.

In annexes to its report, the committee gave itemized time and cost estimates for various quarantine operations, including disinsection of aircraft and ships.

Aircraft

It was recommended that aircraft be disinsected before departure ; but, if the presence on board of live insect-vectors is suspected, additional

FIG. 1. INSECTICIDES - I



Preparing insecticides and spraying apparatus

[4] *World Hlth Org. techn. Rep. Ser.* 1950, **8**, 21

FIG. 2. INSECTICIDES - II

Applying DDT residual spray

treatment should be carried out after landing. Disinsection by the crew during flight is not to be considered adequate.

An aerosol containing 0.4% w/w pyrethrins and 3.0% w/w DDT (4 mg pyrethrins and 30 mg DDT per 1 g) dispensed at the rate of 10 g of the formulation per 28 m^3 (1,000 cubic feet) of enclosed space is the method of choice for disinsecting the interior of aircraft, though equally effective formulations may be used. The insecticide should be non-inflammable and non-injurious to furnishings and equipment, should meet the requirements regarding non-production of crazing of stressed Perspex (plexiglas) (test described in the committee's report), and, if used in the presence of passengers and crew, should be non-injurious to health and of minimum discomfort. Recommended spraying time using the above formula is 5 seconds per 28 m^3.

The Expert Committee on Insecticides suggested that WHO might specifically investigate the possibilities of (1) reducing in aircraft construction the number of places in which mosquitos may find shelter and which are difficult of access to insecticides, (2) impregnating aircraft fabrics and fittings with residual insecticides, (3) using residual deposits of insecticides inside and outside aircraft, and (4) developing fixed spraying equipment inside aircraft.

Ships

The committee called attention to the paucity of information concerning disinsection of ships and listed the following points on which WHO should seek data :

(1) how and from what distances insect vectors of disease are able to infest ships ;

(2) distribution of such insects on board ;

(3) their survival rate in various places, in harbour and during voyages, under varying meteorological conditions ;

(4) the efficacy of various insecticides and methods of application, including residual sprays, in different parts of the ship ;

(5) the influence of the size of the ship on the risk of its being infested and thereby being a cause of reinfestation of a freed area ; and

(6) " tainting " effects of insecticides on foodstuffs and cargoes.

Recognizing that insecticidal treatment of ships arriving in ports from infested areas might interfere with the free flow of traffic, and also that a negative result on inspection is no guarantee that a craft is free from insect vectors of disease, the committee recommended as a compromise, and pending receipt of further information, that the routine treatment of ships arriving in ports declared free from insect vectors be abandoned and replaced by routine inspection. For boats of small size (25 tons or less), however, it may be easier to treat than to inspect, and the health authority should be given this option.

It was specifically recommended that :

(1) treatment be carried out only on those ships found to be infested with malaria vector species and in those portions of the ship decided upon by the health authority ;

(2) this procedure be adopted in the examination of ships for disease vectors which are not present in the port of arrival but which could become established there ;

(3) those countries which have formally declared certain areas of their territories free from malaria vectors continue to maintain a health service at the ports in those areas, this service to be capable of inspecting and, when necessary, of treating incoming ships.

Space-spraying of ships may be appropriate in some instances ; but, where there are regular and frequent services between the port concerned and nearby territories, residual treatment would probably be the method of choice. For space-spraying, the procedure specified is the same as for the interior of aircraft, i.e., aerosol containing DDT and pyrethrins (see above), or equivalent formulation. Residual spraying requires the application of DDT suspensions, solutions, or emulsions at the rate of 2 g per m^2 (200 mg per square foot).

Specifications

Spraying apparatus

The committee reviewed and amended the specifications for knapsack/compression and hand sprayers which it had drawn up at its first session [5] and, in addition, drafted tentative specifications for stirrup pumps. Stirrup pumps may be most economical for use if a plentiful supply of cheap labour is available and if this type of equipment is readily obtainable while other kinds are difficult to procure because of currency difficulties.

Insecticides and their formulations

Besides revising the specifications for DDT as approved at its first session [6], the committee drew up specifications for technical benzene hexachloride (12%-14% gamma BHC), gamma-isomer benzene hexachloride concentrates (90% and above), technical chlordane (agricultural and refined grades) (tentative specifications), methoxychlor, wettable powder concentrates of DDT and BHC, and DDT emulsion concentrates (tentative specifications). Packing and marking of packages were indicated for each insecticide, the latter including a cautionary notice regarding the toxicity of the products.

Also described were test procedures for determining the chemical composition and physical characteristics of each insecticide, e.g., the Winter, Parr peroxide-bomb, and Stepanow methods for determining total organic chlorine content ; the polarographic and chromatographic methods for determining gamma-isomer content of technical BHC ; maximum diameter (particle size) determination, agglomerate test, settling rate, and tropical storage tests for DDT wettable powder concentrates ; and flash point determination (both TAG Closed Tester and Cleveland Open Tester methods) for DDT emulsion concentrates.

The report on this session of the Expert Committee on Insecticides was of considerable value to the Expert Committee on International Epidemiology and Quarantine, the Expert Committee on Malaria,[7] and the Malaria Conference in Equatorial Africa, held in Kampala, Uganda, in late November 1950.[8]

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[5] *World Hlth Org. techn. Rep. Ser.* 1950, 4, 9
[6] *World Hlth Org. techn. Rep. Ser.* 1950, 4, 4
[7] *World Hlth Org. techn. Rep. Ser.* 1951, 39
[8] *World Hlth Org. techn. Rep. Ser.* 1951, 38

MALARIA CONTROL

The report on the fourth session of the Expert Committee on Malaria [1] has been published as No. 39 of the *World Health Organization : Technical Report Series*. The session was held at Kampala, Uganda, from 11 to 16 December 1950, after the Malaria Conference in Equatorial Africa.[2]

Some of the problems of malaria control in Africa were discussed. The measures to be adopted to avoid transporting anophelines from one region to another in aircraft were considered, and WHO's activities in connexion with malaria control were reviewed and commented upon. The following is a summary of the discussions and the principal recommendations of the committee.

Eradication

In 1948, the Expert Committee on Malaria discussed the respective merits of the two conceptions of malaria control, which at that time appeared to be based on different principles :

(*a*) eradication of the vector species, i.e., destruction of the mosquitos and their larvae by intensive action in a limited zone during a relatively short period ;

(*b*) control by repeated spraying of residual insecticides over several years, without attempting actual eradication of the vector species.

During the recent session the committee again examined this question. It was of the opinion that the original divergence between the two points of view tended today to become less wide, the two systems being, in fact, complementary. Experience has shown on the one hand that the essence of an economic eradication scheme is prolonged, persistent attack and, on the other hand, that the successful malaria-control campaigns carried out

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[1] The following took part in this session :

Dr. S. Annecke, Deputy Chief Health Officer, Union Department of Health, Tzaneen, Transvaal, Union of South Africa

Professor F. J. C. Cambournac, Professor, Institute of Tropical Medicine, Lisbon ; Director, Malaria Institute, Aguas de Moura, Portugal

Major-General Sir Gordon Covell, Adviser on Malaria, Ministry of Health ; Director, Malaria Laboratory, Horton Hospital, Epsom, Surrey, United Kingdom (*Chairman*)

Professor G. Macdonald, Director, Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, London, United Kingdom

Dr. P. F. Russell, Representative in Italy of the Rockefeller Foundation International Health Division, Istituto Superiore di Sanità, Rome, Italy

Lieutenant-Colonel J. Singh, Director, Malaria Institute of India ; Additional Deputy Director-General of Health Services, New Delhi, India

Professor N. H. Swellengrebel, Professor of Parasitology, University of Amsterdam ; Director, Institute of Tropical Hygiene, Amsterdam, Netherlands

Médecin-Général M. A. Vaucel, Inspecteur, Pathologie tropicale, Paris, France (*Vice-Chairman*)

Dr. D. B. Wilson, Director, East African Malaria Unit, Muheza, Tanganyika

Secretary :

Dr. E. J. Pampana, Chief, Malaria Section, WHO

[2] The report of this conference is published as *World Hlth Org. techn. Rep. Ser.* 1951, **38**. See also *Chron. World Hlth Org.* 1951, **5**, 95.

with residual insecticides in various countries have brought about a progressive reduction in numbers of anophelines which may lead eventually to their complete elimination ; the results of the campaigns have often surpassed expectations.

Eradication campaigns in Sardinia and Cyprus have been carried out in territories protected from re-infestation by natural barriers—in this case, by the sea. The next phase in eradication experiments should be the trial of similar treatment in regions without any such natural protection. The Malaria Conference in Equatorial Africa discussed this matter but did not make any recommendations on the subject. It noted the eradication scheme instituted at Ilaro, Nigeria, by the Malaria Service of the Nigerian Government, as an effort to implement the recommendations of the Expert Committee on Malaria.

Ilaro is a small town of some 12,000 inhabitants and 2,300 houses, and it represents a semirural community situated in a region where malaria is hyperendemic. The residual insecticide spraying was commenced in March 1950 and is repeated every three months. All the houses and all buildings within a radius of 4.5 km of the town are treated.[3]

The committee expressed its thanks to the Government of Nigeria for this initiative and suggested that similar programmes be implemented elsewhere, based on the following principles :

(1) careful choice of an area, infested by *Anopheles gambiae* and not containing any major economically unmanageable tract ;

(2) careful survey of the area in order to estimate prevalence of malaria and the density of adult and larval vector anophelines during each season of the year ;

(3) control measures—larvicidal and/or imagocidal—with careful check on anopheline density and distribution, both adult and larval ;

(4) investigation, and eventually adoption, of all antilarval or anti-adult measures, or modifications thereof, which might contribute to successful control.

The committee recommended that the attention of governments be drawn to these principles. It considered that WHO should encourage the implementation of such experimental programmes and, if necessary, provide technical assistance to governments wishing to apply them.

Disinsection of Airports

The committee considered the measures which would be advisable for preventing transport of anophelines by international air transport and

[3] This information is taken from a paper by Dr. L. J. Bruce-Chwatt, entitled "Malaria in Nigeria", which was presented to the Malaria Conference in Equatorial Africa and which will be published in a forthcoming number of the *Bulletin of the World Health Organization*.

which would at the same time safeguard traffic facilities to an extent compatible with the maintenance of public health. The two most important dangers are :

(1) transport of important vector species outside their normal area and their introduction into another continent—it is known, for example, that *A. gambiae* penetrated into America in this manner ;

(2) invasion by anophelines of regions adjoining their normal distribution area, and reinfestation of zones which have been freed from vector species.

Protection measures must guard against these two risks. They should include, in particular, rigorous disinfestation of airports ; no measures applied to aircraft can lessen the importance of such precautions.

In addition, the following provisions might be made :

WHO might prepare a list of anophelines considered to be of major importance, whose passage from one continent, or subcontinental division, to another constitutes a serious danger. Such a list should include : *A. albimanus*, *culicifacies*, *darlingi*, *gambiae*, *labranchiae*, *melas*, *sacharovi*, *stephensi*, *sundaicus*, and the whole of the *punctulatus* group. The list would need to be revised in due course.

International airfields should be classified " according to the risk of anophelines invading aircraft on them ", on the basis of evidence furnished by the government concerned and with the approval of WHO. The following classification might be adopted :

(*a*) airfields free from anophelines, that is, free from breeding-places of anopheline vectors, within a radius of 5 km. If such breeding-places are present within a radius of 10 km, all buildings on the airfield should be sprayed with residual insecticide ;

(*b*) airfields free from anophelines of major importance (according to criteria of the preceding paragraph) ;

(*c*) airfields protected against anopheline invasion, i.e., on which all airport buildings have been treated with residual insecticide and on which anopheline breeding has been controlled within a radius of 1 km.

(*d*) airfields concerning which there is no definite indication regarding risks of anopheline invasion.

WHO Malaria-Control Activities

During the past years WHO malaria-control activities have been founded on a policy which has been shown to be effective. Wherever malaria-control demonstration teams have been sent out there has been a decrease in malaria, as indicated by the infant parasite-rate, which is the surest criterion for the assessment of results of any short-term action. The committee emphasized

that the success already obtained justified the continuance of the assistance which WHO has given to underdeveloped countries and considered that it should establish the claim of malaria as a WHO priority. It reaffirmed the recommendation, made fourteen years ago through the Intergovernmental Conference of Far Eastern Countries on Rural Hygiene, that " in those areas where malaria is the outstanding social and health problem, the resources of the health administration . . . should be directed chiefly towards malaria control . . . until malaria is no longer of major importance ".[4]

The committee suggested a few modifications which might be introduced into the WHO work methods. The particular points stressed were the prolongation of the assignments of members of demonstration teams to a minimum of three years, the organization of a greater number of malariology courses, and the granting of more fellowships, which in certain cases should be awarded for short-term practical field training. The shortage of technical personnel will be particularly felt in Africa when control programmes begin to be undertaken more or less generally. International courses on malariology, as recommended by the Malaria Conference in Equatorial Africa, could also make a useful contribution to the training of personnel for directive posts in malaria control.

Insecticides

After declaring itself in agreement on the main points of the report on the second session of the Expert Committee on Insecticides,[5] the committee emphasized the particular significance of one of the recommendations of that report—a recommendation concerning the necessity for the intensification of scientific research. The committee mentioned a problem the solution of which is most urgent : the resistance of insects to insecticides. A considerable number of insect strains of various species have become resistant to DDT, BHC, Chlordan, and Dieldrin. These substances no longer deal effectively with houseflies. While up to now no species of anopheles has been found resistant to the above-mentioned insecticides, yet the fact that some species of *Culex* and *Aëdes* are resistant to them shows that we must be on our guard. Research, with the co-operation of organic toxicant chemists and physiologists, should make it possible to determine the relationship between insect, toxicant, and formulation.

The committee also examined the recommendations of the Malaria Conference in Equatorial Africa, in particular those relating to control in hyperendemic regions. The actual situation with regard to the chemo-

[4] League of Nations Health Organization (1937) *Report of the Intergovernmental Conference of Far Eastern Countries on Rural Hygiene*, Geneva, p. 90.

[5] *World Hlth Org. techn. Rep. Ser.* 1951, 34 ; see also page 147.

therapy of malaria was reviewed. Some decisions were made with a view to detailed revision of the terminology employed in malariology as it was felt that such revision would contribute to standardization of methods of establishing epidemiological surveys.

WORLD INCIDENCE OF TYPHOID AND PARATYPHOID FEVERS SINCE 1947

Europe

Recrudescence of typhoid and paratyphoid fevers in Europe during the first postwar years gave rise to fear that these diseases might be spreading. In fact, after a period of regression, typhoid fevers again became " a significant index of basic sanitary conditions ", and the situation was then considered to be " thoroughly unsatisfactory ".[1]

By 1948, however, there was already a lull in the outbreak, and incidence of these diseases declined. This decline was accentuated in 1949 and 1950, as is seen in statistics published in the *Epidemiological and Vital Statistics Report*.[2]

The total number of cases reported in Europe [3] fell from about 162,000 in 1947 to 124,000 in 1949 ; cases for 1950 are estimated at about 105,000. It is true that the figures are still high in some large countries. For example, from January to November 1950 about 26,700 cases were reported in Italy, where incidence from 1947 to 1949 had declined in nearly all regions (see fig. 3). In France, an exceptionally marked recrudescence was observed in 1949, there being about 22,000 cases whereas in 1948 only about 10,000 cases had been reported (see fig. 4) ; incidence decreased in 1950, the number of cases being about the same as in 1948. In the Federal Republic of Germany, the decrease in incidence during the past few years has been particularly striking : about 32,000 cases were recorded in 1947 as compared with only 14,000 in 1949 (see fig. 5) ; the figures for 1950 will undoubtedly show fewer than 11,000 cases. In Spain, there were approximately 20,000 cases in 1947 and about 21,600 in 1949 (see fig. 6). In various other countries where the situation is relatively satisfactory, such as Sweden and Switzerland, the morbidity-rate for typhoid and paratyphoid fevers is, nevertheless, higher than in the United Kingdom or in the USA. It would seem that, in general, there is still room for improvement

FIG. 3. DISTRIBUTIO

[1] Stowman, K. (1948) *Epid. Vital Stat. Rep.* 1, 166 ; see also *Chron. World Hlth Org.* 1948, 2, 68.
[2] *Epid. Vital Stat. Rep.* 1950, 3, 296
[3] Not including Portugal, Rumania, USSR and the Soviet Occupation Zone of Germany

FIG. 3. DISTRIBUTIO[illegible]

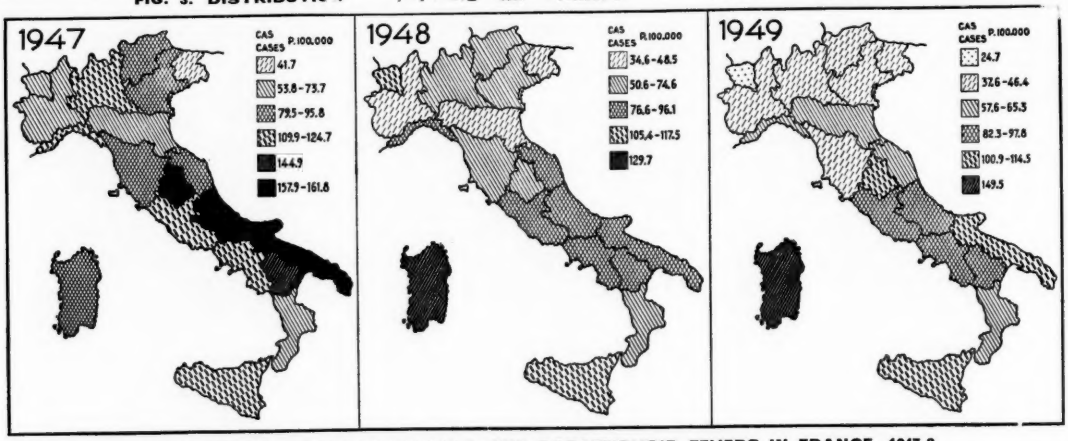
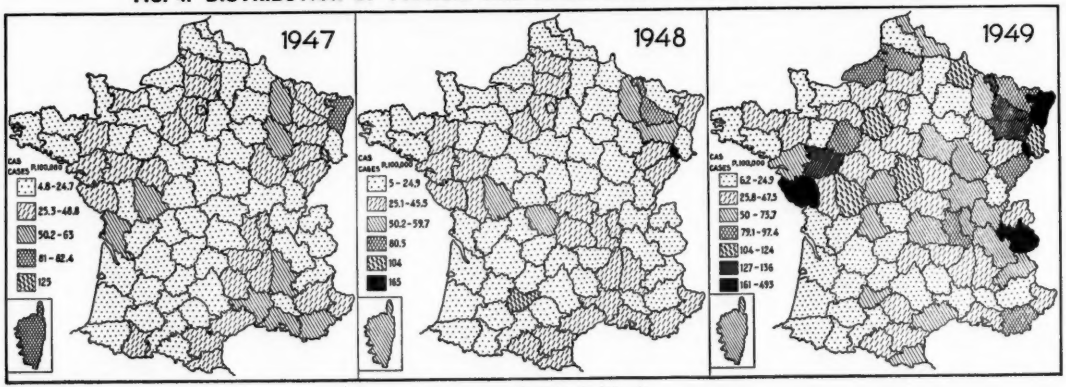


FIG. 4. DISTRIBUTION OF TYPHOID AND PARATYPHOID FEVERS IN FRANCE, 1947-9



Cases per 100,000 inhabitants

FIG. 5. DISTRIBUTION OF TYPHOID AND PARATYPHOID FEVERS IN GERMANY, 1947-9

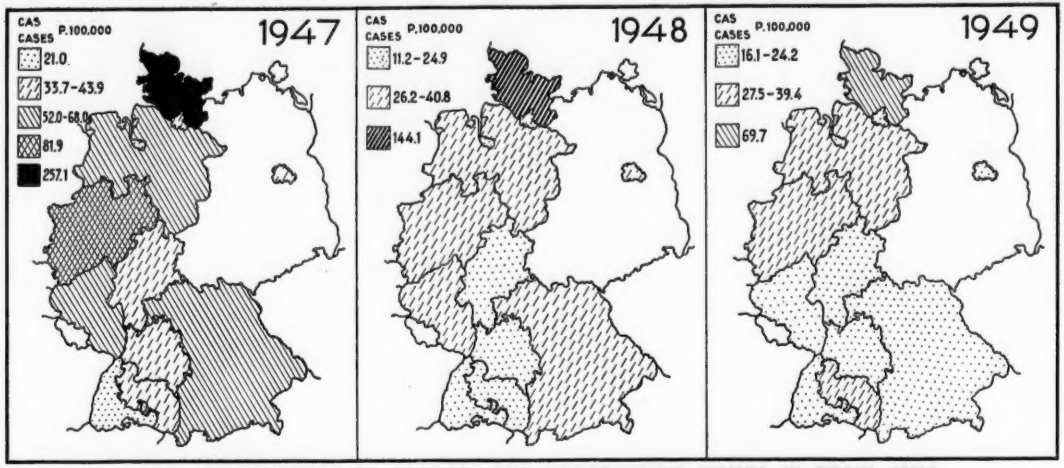
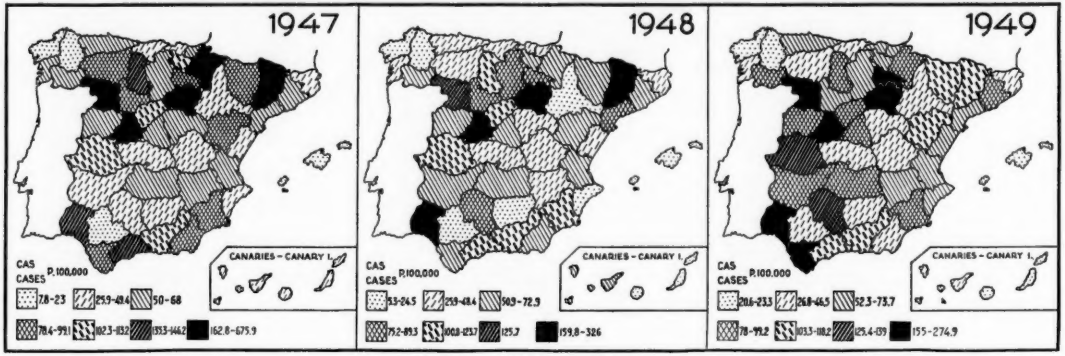
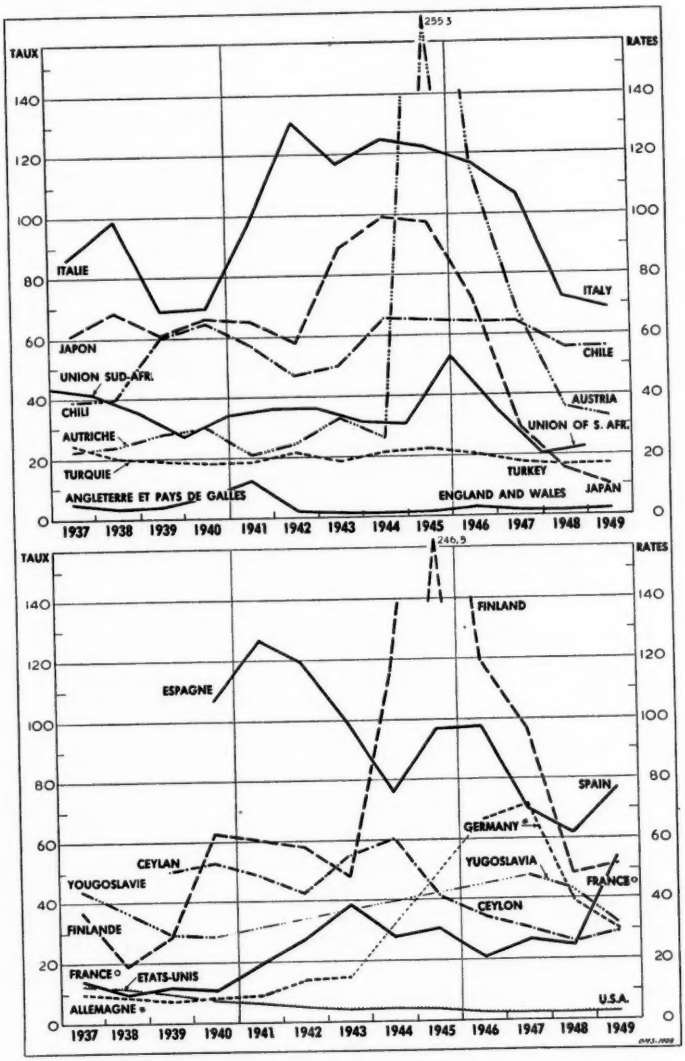


FIG. 6. DISTRIBUTION OF TYPHOID AND PARATYPHOID FEVERS IN SPAIN, 1947-9



Cases per 100,000 nhabitants

FIG. 7. INCIDENCE OF TYPHOID AND PARATYPHOID FEVERS IN VARIOUS COUNTRIES, 1937-49



Cases per 100,000 inhabitants

* 1937-1943, old "Reich"; 1946-1949, Federal Republic of Germany

° 87 departments in 1940, 1941, 1942, and 1945; 86 departments in 1943 and 1944

in so far as the situation in Europe is concerned. New drugs which are being studied will undoubtedly contribute to such improvement.

Africa

In the African countries in which there is a relatively high incidence —Algeria, Tunisia, Morocco, Madagascar, Mauritius—a decrease has been noted since 1947. On the other hand, the 7,110 cases, with 814 deaths, reported in Egypt in 1949 represented the highest figure registered in that country for 25 years. In Kenya, the number of cases trebled from 1947 to 1949, reaching a figure of 1,240, with 113 deaths, in the latter year.

America

The total annual number of cases—about 40,000 for the whole continent —hardly varied between 1947 and 1950. Although incidence increased in 1948 and 1949 in certain countries, such as Colombia, it decreased in Costa Rica, Cuba, Haiti, Jamaica, Peru, and St. Vincent—mostly insular countries.

The USA has the lowest morbidity-rate (about 4,000 cases in 1949 for 150 million inhabitants). In Mexico, a country of some 25 million inhabitants, there were more cases than in the USA (6,000 in 1949) ; and the number of deaths there equalled the number of cases in the USA.

Asia and Oceania

In Japan there has been a considerable decrease in incidence. The annual average from 1939 to 1945 was about 47,000 cases, whereas in 1949 there were fewer than 9,000 cases with about 900 deaths. On the other hand, a recrudescence of typhoid fevers was noted in most of the countries for which information is available. During the 1950 period for which figures are given, notifications exceeded those of the corresponding 1949 period in the following countries and localities : Afghanistan, Ceylon, Shanghai (China), Cyprus, Hong Kong, Iraq, Iran, Israel, Federation of Malaya, Manila (Philippines), the Hashemite Kingdom of the Jordan, Singapore (city), Syria, Bangkok (Thailand).

In the Fiji Islands, the number of cases reported increased from 35 in 1947 to 103 in 1948, and 222 in 1949, and then fell to 180 in 1950.

Fig. 7 gives some idea of the development of typhoid and paratyphoid fevers between 1937 and 1949 in the various countries of the world.

WORLD INCIDENCE OF POLIOMYELITIS IN 1950

In 1950, poliomyelitis incidence decreased in Canada and the USA as compared with 1949. On the other hand, in Europe, particularly in the British Isles and certain Scandinavian countries, incidence was higher. Epidemic outbreaks were observed in Alaska, Australia, the Belgian Congo, Israel, Panama, and Manila (Philippines). The disease was almost completely absent from Iceland, Mauritius, and New Zealand, where in 1949 it had assumed epidemic proportions.

This is the broad outline of the world situation with regard to poliomyelitis in 1950, as shown by the statistics received by WHO and analysed in the *Epidemiological and Vital Statistics Report*.[1] The study in question follows one which appeared previously on the evolution of poliomyelitis from 1947 to 1949.[2]

It should be pointed out, however, that the number of cases notified throughout the world is very small compared with actual incidence. This is also true of a number of other compulsorily notifiable diseases, but it is particularly marked in the case of poliomyelitis since the non-paralytic forms of the malady may pass unobserved. It is obvious that the number of notified cases bears a closer relation to actual incidence in those countries where the disease has spread considerably during recent years, such as the USA and the United Kingdom, or where the system of case-finding is more developed.

Africa

The total number of cases notified was approximately the same as in 1949, i.e., about 1,200, although the disease progressed in several territories. Thus, in the Belgian Congo the number of cases increased from 209 in 1949 to 492 in 1950 ; this latter figure represents about 40% of the total number of cases reported on the African continent. The province of Costermansville was particularly affected ; another important focus, with 140 cases, developed in the province of Leopoldville.

An increase was noted in the countries of French North Africa (174 cases in 1950 as against 35 in 1949) and in Kenya. On the other hand, incidence decreased in Mauritius (10 cases as compared with 362), Tanganyika, and the Union of South Africa.

America

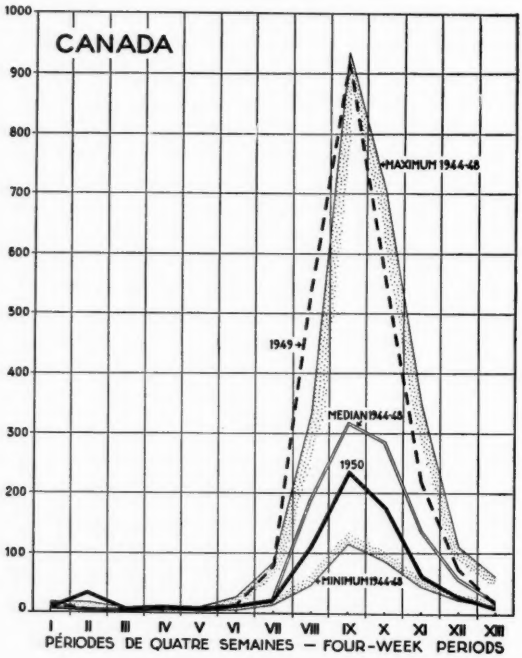
In Canada and the USA there was a notable decrease in the number of cases : in 1949, 2,437 cases were notified in Canada, whereas in 1950 there

[1] *Epidem. vital Stat. Rep.* 1951, 4, 3

[2] *Epidem. vital Stat. Rep.* 1950, 3, 3 ; see also *Chron. World Hlth Org.*, 1950, 4, 307.

were only 706 (see fig. 8). In the USA, 33,329 cases were reported in 1950 as against 42,173 in 1949 (see fig. 9). The decrease was particularly marked in those States in which the morbidity-rate was highest in 1949, i.e., North Dakota, South Dakota, Idaho, and Minnesota (see fig. 10). However, there was no lowering of incidence in 19 States ; in fact, incidence more than doubled in North Carolina, South Carolina, Maryland, and Virginia.

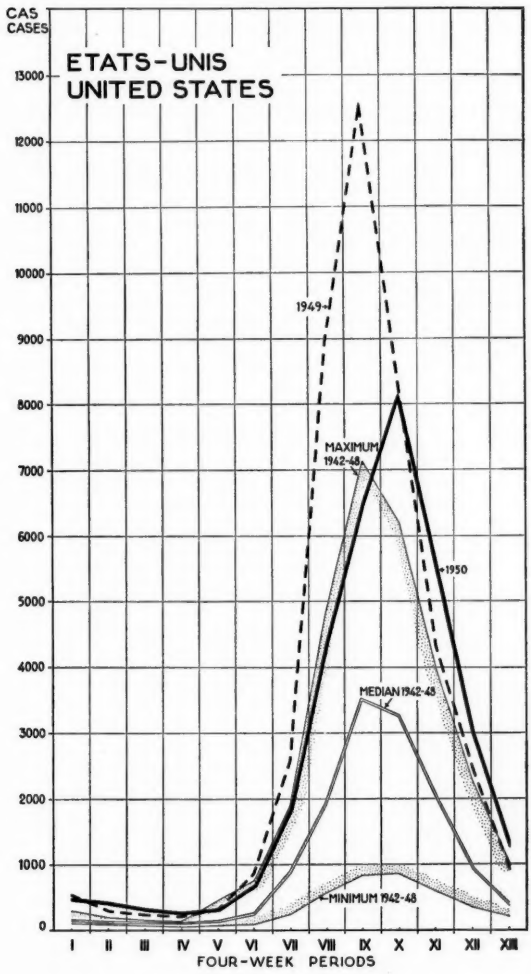
FIG. 8. INCIDENCE OF POLIOMYELITIS IN CANADA 1944-50



Although the data for the other American countries are not yet complete for 1950, incidence appears to have increased in the following territories and countries : Alaska, Chile, Costa Rica, Ecuador, Jamaica, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Uruguay, and Venezuela.

In Panama, there was an epidemic outbreak at the end of August 1950, and about 100 cases were notified during the last three months of the year as compared with a maximum of 9 during the corresponding period in the years 1945-9.

FIG. 9. INCIDENCE OF POLIOMYELITIS IN THE USA, 1942-50



Notifications by four-week periods

Asia

Little information is available—apart from data concerning a few towns—on poliomyelitis incidence in any of the large Asiatic countries except Japan, where the number of cases in 1950 was about the same as in 1949, i.e., approximately 3,000.

FIG. 10. DISTRIBUTION OF POLIOMYELITIS IN THE USA, 1949-50

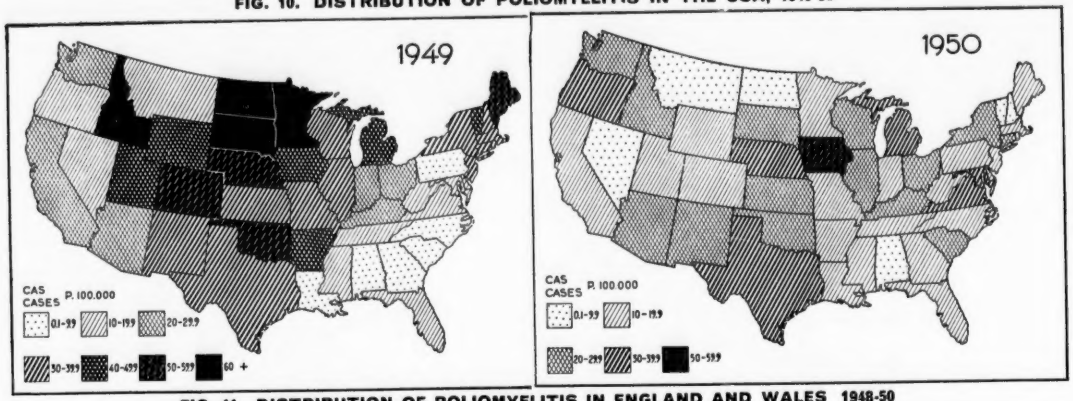
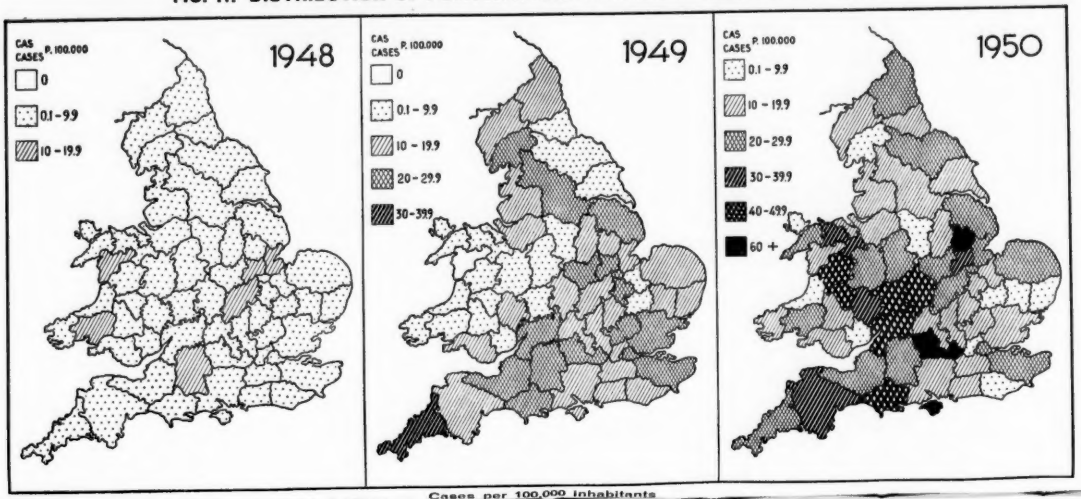


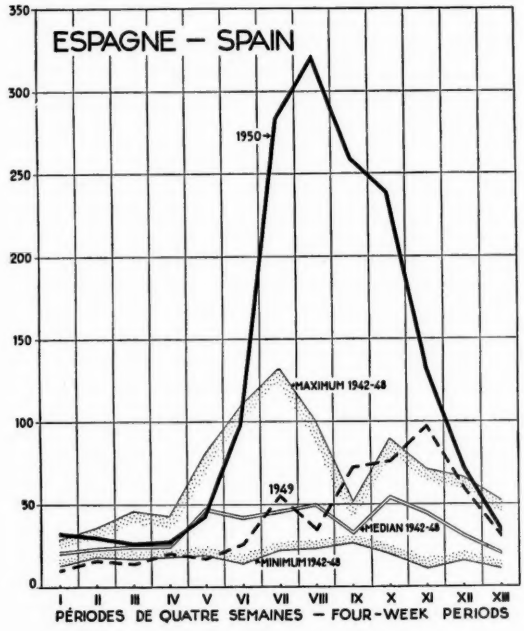
FIG. 11. DISTRIBUTION OF POLIOMYELITIS IN ENGLAND AND WALES 1948-50



Cases per 100,000 inhabitants

In Israel, incidence assumed epidemic proportions in the autumn of 1949 : the monthly average of notified cases between October 1949 and March 1950 was 26 cases. The maximum incidence was registered in May, June, and July 1950. Nearly all regions were affected. About 95% of the cases were observed in children under five years of age and 70% in children less than two years of age. The mortality-rate was high.

FIG. 12. INCIDENCE OF POLIOMYELITIS IN SPAIN, 1942-50



Notifications by four-week periods

In Manila (Philippines), there was a marked increase in the number of notified cases, which totalled 164 in 1950. There was an outbreak between 10 March and 6 May 1950 in Viet Nam.

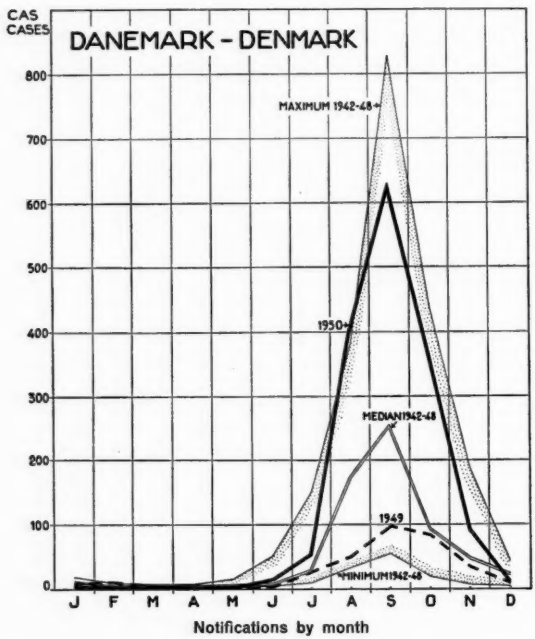
In India, 900 cases were notified during the first eleven months of the year. The epidemic outbreak in Bombay abated : 421 cases had been notified between 1 January and 15 December 1949 ; from January to November 1950 there were only 115 cases.

Europe

" The number of notifications in the continent as a whole [3] (about 25,000 in 1950) represents an increase of 12% over the year 1949, and of 14% over the year 1948, but it is less than the maximum observed in 1947 (30,000). The greatest increases occurred in Northern Ireland, Norway, Scotland, Denmark and Spain."

During 1950, there was an increase of notified cases in the Federal Republic of Germany, Greece, Ireland, Malta, Spain, the United Kingdom,

FIG. 13. INCIDENCE OF POLIOMYELITIS IN DENMARK, 1942-50



and several Scandinavian countries. In England and Wales, 8,709 cases were declared in 1950 as against 6,866 in 1949 (see fig. 11). Seventy per cent were paralytic cases. In Scotland, the increase was still more marked: 1,189 cases in 1950 as against 216 in 1949. The same was true of Northern Ireland (316 cases as against 40) and of the Irish Republic (202 cases as against 78).

[3] Not including Bulgaria, Hungary, Poland, Portugal, Rumania, the Soviet Occupation Zone of Germany, and the USSR, concerning incidence in which there is complete or partial lack of information

In France, the disease has generally retained a diffuse endemic nature. In Spain, the number of cases notified in 1950 represents a little more than twice the maximum observed during the course of the ten previous years : 741 cases in 1942 and 1,572 in 1950 (see fig. 12).

In the Federal Republic of Germany there were 2,831 cases in 1950 as against 1,733 in 1949. However, these figures are less than those for 1947 and 1948, years during which very serious outbreaks of the disease were observed (more than 5,000 cases in 1948). In Austria, Belgium, the Netherlands, and Switzerland the situation was definitely better than in 1949.

Northern Europe, on the other hand, suffered considerably. A very serious outbreak occurred in Denmark : 1,572 cases were notified in 1950 as compared with 323 in 1949 (see fig. 13). In Norway, 700 paralytic cases were notified in 1950, as against 119 in 1949. In Sweden, incidence decreased : 1,718 in 1950, 2,584 in 1949.

Oceania

About 2,270 cases were notified in Australia—more than in 1946 or 1949, the years of maximum incidence since 1939. In New Zealand, the number of cases fell from 321 in 1949 to 60 in 1950 for the period January to September.

From the information so far available it appears " that for the moment North America, the British Isles and the Scandinavian countries continue to be the principal foci of poliomyelitis. The future will show if it is necessary to include with this group such countries as the Belgian Congo, Israel, Panama, etc., where, as far as it is possible to judge on the basis of the notifications, for the first time it would appear that the disease has taken on an epidemic form."

FAO/WHO BRUCELLOSIS CENTRES

A good example of successful international co-operation may be found in the FAO/WHO brucellosis centres. These centres, which were established in 1950 and early 1951, are helping to co-ordinate the activities of WHO, FAO, and the Office international des Epizooties (OIE), in addition to furthering research on problems relative to brucellosis.

The centres now number 12 and are located in Argentina (Buenos Aires), Australia (Parkville, Victoria), Denmark (Copenhagen), England (Weybridge, Surrey), France (Montpellier, Hérault), Greece (Athens), Italy (Florence), Mexico (Mexico City), Turkey (Ankara), Union of South Africa

(Onderstepoort), USA (Minneapolis, Minn.), and Yugoslavia (Rijeka). It is planned to establish one additional centre in Latin America, and two in the Far East.

Specific research projects, co-ordinated by WHO—with the collaboration of FAO and OIE—are under way at the various centres :

Project	*Participating centres*
1. Exchange of strains of Brucella ; comparative testing of them according to procedures recommended by the Joint FAO/WHO Expert Panel on Brucellosis ; [1] selection of the three type-species of Brucella, these to be freeze-dried and distributed to all the centres as reference strains	Montpellier, Weybridge, Minneapolis (The US Bureau of Animal Industry Laboratory at Beltsville, Md., is also co-operating in this project.)
2. Antibiotic-sulfonamide and vaccine therapy in human brucellosis	Mexico City, Montpellier, Minneapolis, Rijeka
3. Haemoculture in human beings ; diagnostic procedures other than the sero-agglutination test	Rijeka, Mexico City, Montpellier, Minneapolis
4. Sero-agglutination test in man and animals	Montpellier, Weybridge
5. Standardization of antigens used in the milk-ring test and application of the ring test in cattle	Copenhagen, Minneapolis
6. Simplified production of strain 19 vaccine for cattle	Weybridge
7. Improved diagnostic and vaccine procedures in sheep and goats (intradermic and milk-ring tests)	Florence, Rijeka, Montpellier (Ankara and Buenos Aires to work on this also)
8. Local and regional surveys on prevalence of brucellosis	All centres

Approximately $8,000 was granted by WHO to various centres in 1950, particularly to those in Argentina, France, Italy, Mexico, and Turkey. UNICEF provided laboratory equipment and supplies for the centres in Italy and Yugoslavia. This year, a sum of $2,000 has been allocated by WHO for the purchase of standard media, dyes, and antigens for distribution and use in all the centres.

The brucellosis centres, and the national health-administrations which they serve, are co-operating with WHO and FAO in such a way as to make their work an invaluable asset to the advancement of knowledge concerning brucellosis and its control.

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[1] *World Hlth Org. techn. Rep. Ser.* 1951, 37 ; see also *Chron. World Hlth Org.* 1951, 5, 129.

NEW WHO STATISTICAL PUBLICATION

Part I of the *Annual Epidemiological and Vital Statistics, 1939-1946*, has recently been published by WHO. This publication is a continuation of the *Annual Epidemiological Report* issued by the Health Organization of the League of Nations since 1923, the last volume of which, containing statistics for the year 1938, appeared in 1941. Part I of the intended volume deals with vital statistics and causes of death. Part II, containing corrected statistics of notifiable diseases, is expected to follow shortly.

As is explained in the Introduction, " this volume follows on the whole the pattern of the annual reports issued by the League of Nations. Part I supplies, in respect of a large number of countries, information on : total area, latest available census results, estimated population, nuptiality, natality, fertility, gross and net reproduction rates, and general and infant mortality rates for the period 1921-1946 ; neo-natal mortality rates for the period 1931-1946 ; and mortality by cause of death in 33 countries from the pre-war period up to 1946. Tables giving similar information for large towns are added, care having been taken to note when correction for residence has been made.

"As within the period covered by this series, 1939-1946, the revised nomenclature for the international list of causes of death adopted in 1938 came into force, a comprehensive note explaining the changes incorporated into the abridged lists of 1929 and 1938 is also given . . . in order to facilitate the interpretation and eventually the comparison of the statistics based on these two lists."

Reports from WHO Fellows

Many of the letters and reports received from WHO Fellows are of such interest that they deserve to be read by a wider public. They demonstrate more vividly than a series of facts and figures both the character of the fellowship programme and the response of the Fellows themselves. Selections from these reports are therefore published from time to time, but it must be emphasized that the opinions expressed are those of the Fellows.

Nursing in " Outback " Australia

Mrs. Maria P. Velono, WHO/UNICEF Fellow from the Philippines, made a 12-month study-tour of public-health nursing services in New Zealand and Australia. In one of her reports, Mrs. Velono describes some of the unique and interesting medical services which she observed in Australia.

Nursing in "outback" Australia means serving men, women, and children in remote settlements, boundary riders and stockmen who live far from other human contacts for long periods, and nomadic aborigines. In recent years, various schemes have been devised to reach these people when they are in need of medical care.

Infant welfare by correspondence

In 1932 Western Australia initiated an infant welfare correspondence plan by which a nurse gives advice on child care to mothers by mail. The " Correspondence Sister " now communicates with about 2,000 mothers every year. In addition, she gives weekly broadcasts, writes articles for country newspapers, and periodically visits her " patients ".

Travelling baby-care centres

The numbers of letters received by the correspondence nurse from various areas has helped to determine where permanent child-care centres should be established and where travelling centres may be utilized. Ten travelling centres have been instituted in Western Australia in the past 12 months. In the State of Victoria, a specially fitted, three-ton caravan serves as a " clinic on wheels ". The caravan visits 28 towns in a fortnight's rounds, enabling the nurses to see about 250 infants—weighing them, noting their progress, and giving advice to the mothers. This service was originally financed by voluntary funds but is now partly subsidized by the Government and the municipal councils of the districts it serves.

Flying nurse service

Since 1925 Australia has had a Flying Doctor Service to care for the inhabitants of sparsely settled areas. In 1946, the New South Wales section of the Service decided to appoint a trained nurse to assist the Flying Doctor. The duties of this nurse, as outlined in an official pamphlet published by the Service, are : (1) to engage in home nursing, in approved cases ; (2) to relieve nursing staffs in emergency cases at hospitals within the area of the Flying Doctor Service ; (3) to give advice and help on matters of public health and the prevention of disease, including medical advice where necessary and antenatal and postnatal counsel ; (4) to broadcast talks and speak before school groups ; (5) to perform medical surveys and immunize children within the area ; and (6) to visit,

eventually, every homestead, particularly those without radio or telephone communication. She works independently of, but in co-operation with, the Flying Doctor. While much of the nurse's travelling is done by land transportation, emergency calls and long-distance trips are made by aeroplane.

The flying doctor and nurse services are dependent upon " transceivers ", an invention of a South Australian named Alfred Traeger. These special radio sets enable people to send and receive messages without knowledge of the Morse code : a " Morse Typewriter " converts letters to signals. Each set costs from $375 to $525 ; but, in special cases, gift transceivers have been made available to those unable to purchase them.

Standard medical chests, at a cost of about $36, can be purchased from the Flying Doctor Service by all the residents of the outback. The steel chests are fitted with carefully numbered drugs and instruments so that the doctor, when advised by radio of signs and symptoms, can " prescribe by number ".

In cases of accident and emergency, the doctor flies to the patient and lands on the nearest landing-strip. As many landing strips as possible are kept in readiness to facilitate the arrival of a doctor or nurse.

There are now seven flying doctors, serving zones covering 2,000,000 square miles of country in which there are six main radio bases and small hospitals run by the Australian Inland Mission. The financing of the Flying Doctor Service is met partly by the users, who pay according to a sliding scale based on their property holdings and the number of livestock which they have, e.g., from $15 per year for property supporting 3,000 sheep to $60 for property with 17,000 sheep (note : one head of cattle is equivalent to six sheep). The subscription takes care of the owner of the property, his family, employees, and visitors. For people other than graziers, the subscription rate is about $15 for a family of three or more. Government subsidies and gifts assist in balancing the budget.

Mrs. Velono feels that she has gained much by observing medical service schemes such as these. In expressing her appreciation of her study-tour, she writes : " As a whole, I considered my stay very fruitful, taking into account the wealth of information I have gathered in the visits of the various health agencies. These enriched me professionally and imbued me with optimistic plans that will be of great value to the Organization to which I am attached." The organization, in this instance, is UNICEF, for which Mrs. Velono is Nurse Supervisor of the Child Feeding Programme in the Philippines.

Notes and News

Venereal Diseases

India

According to a recent report on the demonstration project which has been in operation in India for about two years,[1] four complete teams—from Mysore, Madhya Pradesh, Himachal Pradesh, and Punjab—are now under training at the Simla headquarters. This will bring the total number of teams trained at Simla to 14. Two seminars a week are held with the doctor and nurse trainees, during which the nursing aspects of venereal-disease control are discussed ; in addition, lectures are given on clinical, laboratory, and health aspects.

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[1] *Chron. World Hlth Org.* 1949, 3, 134, 294 ; 1950, 4, 61

An increase in clinic attendance has been noted : during March there were 217 new patients, bringing the total number of patients seen in the first three months of 1951 to 1,850.

Indonesia

A review of the progress of the antiyaws campaign in Indonesia [2] reveals that seven teams are now functioning in Jogjakarta, four in Djakarta, two in Ngandjuk, and one in Bondowoso. Laboratory personnel numbers seven ; one member of this staff completed training at the Simla training centre mentioned above.

The records show that in the two former areas 404,069 persons, representing 69.6% of the estimated population, had been examined up to March 1951 ; 69,602 cases of yaws, representing 17.2% of the total number examined, were found. From 24 February to 24 March, 16,546 injections of penicillin were given in Jogjakarta and 4,337 injections in Djakarta.

The campaign in East Java was inaugurated on 12 March in Ngandjuk. In this area, treatment with neosalvarsan was given some 13 years ago ; records are still available, which will make comparative studies possible.

Thailand

The demonstration teams working in Thailand [3] discovered 1,012 cases of yaws among the 6,584 persons examined during the month of February in the Rajburi area. In this area, prevalence of yaws seemed to vary from 7.4% to 11.9%. Plans are being made for the opening of an ante- and postnatal clinic as part of the treponematoses project.

The field teams were given refresher training courses at the end of February. In-training programmes are carried on for the nurses in the project in order to interest them in health education and public-health procedures, and a simple nursing manual has been written and translated into Thai.

Italy

A statistical report on the WHO/UNICEF prenatal and syphilis programme in Italy gives the following results, as of the end of 1950 :

Serological examinations : pregnant women	15,613	
Positive reactions	1,502	(9.6%)
Doubtful reactions	343	(2.2%)
Serological examinations : children	1,079	
Positive	174	(16%)

Publications

New Monograph

The third in the *World Health Organization : Monograph Series* has just appeared : *Lutte antipaludique par les insecticides à action rémanente*, by Dr. E. J. Pampana, Chief of the WHO Malaria Section. This study, issued only in French, was originally published in Volume 3, Number 4 of the *Bulletin of the World Health Organization* and has been summarized in a recent issue of the *Chronicle*.[4]

With the advent of residual-action insecticides, such as DDT and BHC (benzene hexachloride), malaria control has been greatly facilitated. In some countries where

[2] *Chron. World Hlth Org.* 1950, 4, 193 ; 1951, 5, 62
[3] *Chron. World Hlth Org.* 1951, 5, 61
[4] *Chron. World Hlth Org.* 1951, 5, 86

it was formerly an historic scourge—Greece and Italy, for example—it has ceased to be a public-health problem. Dr. Pampana reviews the malaria-control campaigns in progress in some thirty countries in four continents, and gives valuable information on dosages of insecticides used, period of treatment, number of persons or habitations protected, cost of control per head of population, and results of the operations. His is the first survey to give statistical evidence of the success of malaria control by means of residual-action insecticides on a world scale.

This monograph, comprising 72 pages with 11 figures and 22 tables, may be obtained from WHO (Sales Section, Geneva), or any bookseller through the sales agents listed on the back cover of all WHO publications, at the price of 5/-, $1.00, Sw. fr. 4.00.

The Lamp is Lit

There has been a widespread and increasing demand for popular and readable information, for the general public, on the aims and activities of WHO. An attractive illustrated booklet with a text written by Ritchie Calder, entitled *The Lamp is Lit*, has been prepared by the WHO Division of Public Information to help meet this demand. The English version of this booklet is now available, a French edition is in preparation and will be available within a few weeks, and editions in other languages are planned. The booklet will be on sale at a nominal price and may be obtained from WHO (Sales Section, Geneva) or any bookseller through the sales agents listed on the back cover of all WHO publications.

La Presse Médicale

The 16 May issue (Volume **59**, Number 33) of *La Presse Médicale* is devoted to WHO and contains the following original articles on various aspects of the Organization's activities :

"La santé, problème mondial", by Dr. P. Dorolle, Assistant Director-General of WHO—An introduction to WHO, its history, purpose, and means of functioning.

"L'Organisation Mondiale de la Santé et la formation professionnelle dans le domaine de la médecine et de la santé publique", by Professeur J. Parisot, Doyen de la Faculté de Médecine de Nancy ; member of the WHO Executive Board—A discussion of WHO's policy and activities with regard to the education and training of medical and public-health personnel.

"L'Organisation Mondiale de la Santé et l'Enfance", by Professeur R. Debré, of the Académie de Médecine ; Chairman of the Board of Directors of the International Children's Centre—WHO's role in promoting the health and welfare of children.

"La pharmacopée internationale", by Professeur R. Hazard, Professeur de Pharmacologie et de Matière médicale à la Faculté de Médecine de l'Université de Paris — A description of the International Pharmacopeia and WHO's work in preparing it.

"La lutte contre les maladies vénériennes et les tréponématoses par l'OMS", by Professeur M. De Laet, Professeur à l'Université de Bruxelles ; Secrétaire général du Ministère belge de la Santé publique et de la Famille—WHO's activities with regard to treponematoses control.

"La standardisation biologique", by Professeur J. Tréfouël, Director of the Institut Pasteur of Paris ; membre de l'Institut et de l'Académie nationale de Médecine—History of attempts at biological standardization and WHO's achievements in establishing international standards for numerous substances.

"Le problème des stupéfiants synthétiques", by C. Vaille, Chef du Service central de Pharmacie au Ministère de la Santé publique et de la Population, Paris, and G. Stern—The problem of addiction-producing drugs.

Summaries in English and in Spanish of all these articles accompany the journal.

Views on WHO

Local Responsibility for World Health

In his presidential address to the American Public Health Association on 2 November 1950, published in the *American Journal of Public Health*, Albany (1950, **40**, 1363), Dr. Lowell J. Reed, Vice-President of Johns Hopkins University and Hospital, Baltimore, Md., spoke about WHO and the responsibility of members of the Association with regard to world health :

" One of the serious problems facing us at the present time is that of developing strong procedures for doing business at the international level. All of us, as members of the American Public Health Association, are concerned with these movements in their various aspects, but since our more immediate concern is health, our attention is focused mainly on the World Health Organization. ...

" I should like to state at the outset that I think we should all disabuse ourselves of the concept of the World Health Organization as an organization functioning at Geneva. We do have such a unit there, founded on fine democratic principles. But it is not enough to have a democratic form of organization. We all recognize that a democracy is successful only if there is an intense and active interest in it on the part of a wide variety of people at the local level. A democracy is strong not from the activities that filter down from the top to the various lower levels, but from the stimulus of ideas and actions that come up to the top from the day-to-day operations of people below. This principle, which we recognize as so important to the success of democratic government in our own country, is even more important as we move into the area of such world organizations as WHO. Too often we look at such central organizations with just the one question—What is this central organization doing to perform its task ? and forget that this question is never successfully answered in practice if we do not at the same time answer the converse question as to what we in our own particular activities are doing for the success of the central organization. If, as we consider WHO, we cannot give a reasonably good answer to this question, it is bound to grow more and more into a centralized bureaucracy. ...

" It is very easy to proclaim the importance of having an active local interest in WHO, and to have everyone heartily agree. The real difficulty is to determine how such good intentions shall be translated into action. Enthusiasm for world health, developed through meetings, speeches, and such technics is not sufficient, for this will not represent a real interest unless we find some way to crowd into the everyday lives of a number of people some activity that has bearing on world health problems. This is nothing but a statement of the truism that people's real interest lies in what they are doing and not in what they are told about. ...

" It has been frequently said that health work, being one of the easier areas for international co-operation, might be able to develop ways of carrying out activities that would in the end be useful in other forms of human activity. If this is to come about, it will only do so because we drop the concept that the World Health Organization is a structure run by those within the organization, and realize that it is our organization, and begin to do something about it."

WORLD HEALTH ORGANIZATION
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